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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,285	11/13/2003	Richard Greenfield	1875.3700001	5666

26111 7590 09/03/2008
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EXAMINER	
ALIA, CURTIS A	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
09/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/706,285	GREENFIELD ET AL.	
	Examiner	Art Unit	
	Curtis A. Alia	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 20 May 2008.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-7 and 10-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7 and 10-13 is/are rejected.

7)☒ Claim(s) 14-16 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 20 May 2008 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment filed on 20 May 2008 has been entered. Claim 14 has been amended. Claims 1-7 and 10-16 are still pending in this application, with claims 1, 4 and 7 being independent.

Response to Arguments

1. Applicant's arguments with respect to claims 1-7 and 10-13 have been considered but are moot in view of the new ground(s) of rejection.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In *re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-2, 4-5, 7 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8 and 26 of copending Application No. 10/880,769. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Instant claims	Copending claims
1. A method for controlling transmission latency in a communications system, wherein the communications system is subject to a noise signal having at least a first noise phase and a second noise phase, the method comprising: determining a first bit rate for symbols transmitted during the first noise phase, and a second bit rate for symbols transmitted during the second noise phase, the first bit rate and the second bit rate being constrained such that a transmission latency does not exceed a predetermined maximum allowed transmission latency; and transmitting symbols at the first bit rate during the first noise phase and at the second bit rate during the second noise phase. 2. A method accordingly to claim 1, further comprising communicating the predetermined maximum allowed transmission latency via a message to a receiver of the communications system.	26. A method for controlling transmission latency in a communications system ,wherein the communications system is subject to a time varying noise signal having at least a first noise phase and a second noise phase, the method comprising: communicating a predetermined maximum allowed transmission latency via a message to the constrained rate receiver; and transmitting symbols at the first bit rate during a first noise phase and at a second bit rate during the second noise phase; wherein the first bit rate and the second bit rate are determined by the constrained rate receiver such that a transmission latency does not exceed the pre-determined maximum allowed transmission latency.
4. An apparatus for controlling transmission latency in a communications system, wherein the communications system is subject to a noise signal having at least a first noise phase and a second noise phase, the apparatus comprising: a constrained rate receiver for determining a first bit rate for symbols transmitted during the first noise phase, and a second bit rate for symbols transmitted during the second noise phase, the first bit rate and the second bit rate being constrained such that a transmission latency does not exceed a predetermined maximum allowed transmission latency; and a constrained rate transmitter for transmitting symbols at the first bit rate during the first	8. A constrained rate transmitter in a communications system that is subject to a time varying noise signal having at least a first noise phase and a second noise phase, the constrained rate transmitter comprising: a latency control transmitter for communicating a pre-determined maximum allowed transmission latency via a message to a constrained rate receiver; wherein the constrained rate transmitter transmits symbols at a first bit rate during the first noise phase and at a second bit rate during the second noise phase; wherein the first bit rate and the second bit rate are determined by the constrained rate receiver such that a transmission latency does not

noise phase and at the second bit rate during the second noise phase. 5. An apparatus according to claim 4, wherein the constrained rate transmitter further comprising a latency control transmitter for communicating the predetermined maximum allowed transmission latency via a message to the constrained rate receiver.	exceed a pre-determined maximum allowed transmission latency.
7. A constrained rate receiver for controlling transmission latency in a communications system, wherein the communications system is subject to a noise signal having at least a first noise phase and a second noise phase, the receiver being adapted to determining a first bit rate for symbols transmitted during the first noise phase, and a second bit rate for symbols transmitted during the second noise phase, the first bit rate and second bit rate being constrained such that a transmission latency does not exceed a predetermined maximum allowed transmission latency. 10. A constrained rate receiver according to claim 7, capable of receiving a message communicating the predetermined maximum allowed transmission latency.	8. A constrained rate transmitter in a communications system that is subject to a time varying noise signal having at least a first noise phase and a second noise phase, the constrained rate transmitter comprising: a latency control transmitter for communicating a pre-determined maximum allowed transmission latency via a message to a constrained rate receiver; wherein the constrained rate transmitter transmits symbols at a first bit rate during the first noise phase and at a second bit rate during the second noise phase; wherein the first bit rate and the second bit rate are determined by the constrained rate receiver such that a transmission latency does not exceed a pre-determined maximum allowed transmission latency.

5. Claims 3, 6 and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 26 and 8 (respectively) of copending Application No. 10/880,769 in view of Chow (previously cited US 6,009,122).

Regarding claim 3, copending Application No. 10/880,769 does not claim configuring, in accordance with the first bit rate, a first bit allocation table for symbols transmitted during the first noise phase and configuring, in accordance with the second bit rate, a second bit allocation table for symbols transmitted during the second noise phase.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Chow. In particular, Chow teaches configuring, in accordance with a bit rate, a bit allocation table for symbols transmitted during a phase (see column 4, lines 39-54, a superframe bit allocation table is used, wherein a data symbol encoder encodes bits associated with the received data based on the bit allocation table associated with the frame).

In view of the above, having the method of copending Application No. 10/880,769, then given the well-established teaching of Chow, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of copending Application No. 10/880,769 as taught by Chow, since Chow stated in column 4, lines 17-20 that multicarrier modulation systems are able to support multiple bit allocations so that they are able to rapidly alter their bit allocations.

Regarding claim 6, copending Application No. 10/880,769 does not claim a first bit allocation table controller for configuring, in accordance with the first bit rate, a first bit allocation table for symbols transmitted during the first noise phase and a second bit allocation table controller for configuring, in accordance with the second bit rate, a second bit allocation table for symbols transmitted during the second noise phase.

However, the above-mentioned claimed limitation is well known, as evidenced by Chow. In particular, Chow teaches configuring, in accordance with a bit rate, a bit allocation table for symbols transmitted during a phase (see column 4, lines 39-54, a superframe bit allocation table is used, wherein a data symbol encoder encodes bits associated with the received data based on the bit allocation table associated with the frame).

In view of the above, having the apparatus of copending Application No. 10/880,769, then given the well-established teaching of Chow, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the apparatus of copending Application No. 10/880,769 as taught by Chow, since Chow stated in column 4, lines 17-20 that multicarrier modulation systems are able to support multiple bit allocations so that they are able to rapidly alter their bit allocations.

Regarding claim 11, copending Application No. 10/880,769 does not claim a first bit allocation table controller for configuring, in accordance with the first bit rate, a first bit allocation table for symbols transmitted during the first noise phase and a second bit allocation table controller for configuring, in accordance with the second bit rate, a second bit allocation table for symbols transmitted during the second noise phase.

However, the above-mentioned claimed limitation is well known, as evidenced by Chow. In particular, Chow teaches configuring, in accordance with a bit rate, a bit allocation table for symbols transmitted during a phase (see column 4, lines 39-54, a superframe bit allocation table is used, wherein a data symbol encoder encodes bits associated with the received data based on the bit allocation table associated with the frame).

In view of the above, having the method of copending Application No. 10/880,769, then given the well-established teaching of Chow, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of copending Application No. 10/880,769 as taught by Chow, since Chow stated in column 4, lines 17-20 that multicarrier modulation systems are able to support multiple bit allocations so that they are able to rapidly alter their bit allocations.

6. Claims 12-13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 8 of copending Application No. 10/880,769 in view of Amrany et al. (previously cited US 6,580,752).

Regarding claim 12, copending Application No. 10/880,769 does not claim that the first noise phase corresponds to a first signal-to-noise ratio, and the second noise phase corresponds to a second signal-to-noise ratio, the second signal-to-noise ratio being higher than the first signal-to-noise ratio further comprising a second bit rate controller for determining the second bit rate based on the second signal-to-noise ratio.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Amrany. In particular, Amrany teaches that the first noise phase corresponds to a first signal-to-noise ratio (see figure 7, FEXT SRN), and the second noise phase corresponds to a second signal-to-noise ratio (see figure 7, NEXT SNR), the second signal-to-noise ratio being higher than the first signal-to-noise ratio (see column 7, lines 55+, the NEXT noise will be higher than the FEXT noise, thus the FEXT SNR will be higher than the NEXT SNR) further comprising a

second bit rate controller for determining the second bit rate based on the second signal-to-noise ratio (see column 8, lines 1-5, since the composite SNR is the lower (usually NEXT) SNR, the bit loading profile is chosen based on the derived SNR of the NEXT phase).

In view of the above, having the receiver of Application No. 10/880,769, then given the well-established teaching of Amrany, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the receiver of Application No. 10/880,769 as taught by Amrany, since Amrany stated in column 2, lines 62-67, the bitrate can be maximized by limiting crosstalk, regardless of network topology.

Regarding claim 13, copending Application No. 10/880,769 does not claim a first bit rate controller for determining the first bit rate based on the second bit rate and the pre-determined maximum allowed transmission latency.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Amrany. In particular, Amrany teaches a first bit rate controller for determining the first bit rate based on the second bit rate and the pre-determined maximum allowed transmission latency (see column 7, line 39 to column 8, line 6, the bit profile of the FEXT (1^{st}) phase is chosen based on information derived from SNR measured during the NEXT (2^{nd}) phase).

In view of the above, having the receiver of Application No. 10/880,769, then given the well-established teaching of Amrany, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the receiver of Application No. 10/880,769 as taught by Amrany, since Amrany stated in column 2, lines 62-67, the bitrate can be maximized by limiting crosstalk, regardless of network topology.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

7. Claims 1, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura (previously cited US 6,658,024) in view of Kawase (previously cited US 5,774,455).

Regarding claim 1, Okamura discloses a method for controlling transmission latency in a communications system, wherein the communication system is subject to a noise signal having at least a first noise phase (see figure 2, FEXT) and a second noise phase (see figure 2, NEXT), the method comprising determining a first bit rate for symbols transmitted during the first noise phase and a second bit rate for symbols transmitted during the second noise phase (see column 12, lines 21-40, the high data rate and low data rate are controlled according to certain parameters), and transmitting symbols at the first bit rate during the first noise phase and at the second bit rate during the second noise phase (see column 6, lines 55-65, the transmission device receives data at a high data rate and a low data rate, where the high data rate is used during periods of low noise (far end crosstalk)).

Okamura does teach the use of a first bit rate (see figure 7, bit rate during FEXT) and a second bit rate (see figure 7, bit rate during NEXT), but does not explicitly teach that these bit rates are constrained such that a transmission latency does not exceed a pre-determined maximum allowed transmission latency.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Kawase. In particular, Kawase teaches that a bit rate is constrained such that a transmission latency does not exceed a pre-determined maximum allowed transmission latency (see column 2, lines 35-51, the transmission rate of data is calculated based on, among other things, maximum acceptable delay, where the delay imposed cannot exceed the maximum acceptable delay).

In view of the above, having the method of Okamura, then given the well-established teaching of Kawase, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Okamura as taught by Kawase, since Kawase stated in column 2, lines 35-40 that cell loss is minimized.

Regarding claim 4, Okamura discloses an apparatus for controlling transmission latency in a communications system, wherein the communications system is subject to a noise signal having at least a first noise phase (see figure 2, FEXT) and a second noise phase (see figure 2, NEXT), the apparatus comprising a constrained rate receiver for determining a first bit rate for symbols transmitted during the first noise phase, and a second bit rate for symbols transmitted during the second noise phase (see column 12, lines 21-40, the high data rate and low data rate are controlled according to certain parameters) and a constrained rate transmitter for transmitting symbols at the first bit rate during the first noise phase and at the second bit rate during the second noise phase (see column 6, lines 55-65, the transmission device receives data at a high data rate and a low data rate, where the high data rate is used during periods of low noise (far end crosstalk)).

Okamura does teach the use of a first bit rate (see figure 7, bit rate during FEXT) and a second bit rate (see figure 7, bit rate during NEXT), but does not explicitly teach that the first bit rate and the second bit rate being constrained such that a transmission latency does not exceed a predetermined maximum allowed transmission latency.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Kawase. In particular, Kawase teaches that a bit rate is constrained such that a transmission latency does not exceed a pre-determined maximum allowed transmission latency (see column 2, lines 35-51, the transmission rate of data is calculated based on, among other things, maximum acceptable delay, where the delay imposed cannot exceed the maximum acceptable delay).

In view of the above, having the apparatus of Okamura, then given the well-established teaching of Kawase, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the apparatus of Okamura as taught by Kawase, since Kawase stated in column 2, lines 35-40 that cell loss is minimized.

Regarding claim 7, Okamura discloses a receiver being adapted to determining a first bit rate for symbols transmitted during the first noise phase, and a second bit rate for symbols transmitted during the second noise phase (see column 6, lines 55-65, the transmission device receives data at a high data rate and a low data rate, where the high data rate (fast data rate) is used during periods of low noise (far end crosstalk), and the low data rate (interleaved data rate) is used during periods of high noise (near end crosstalk)).

Okamura does teach the use of a first bit rate (see figure 7, bit rate during FEXT) and a second bit rate (see figure 7, bit rate during NEXT), but does not explicitly teach that the first bit

rate and second bit rate are constrained such that a transmission latency does not exceed a predetermined maximum allowed transmission latency.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Kawase. In particular, Kawase teaches that a bit rate is constrained such that a transmission latency does not exceed a pre-determined maximum allowed transmission latency (see column 2, lines 35-51, the transmission rate of data is calculated based on, among other things, maximum acceptable delay, where the delay imposed cannot exceed the maximum acceptable delay).

In view of the above, having the receiver of Okamura, then given the well-established teaching of Kawase, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the receiver of Okamura as taught by Kawase, since Kawase stated in column 2, lines 35-40 that cell loss is minimized.

8. Claims 2, 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura in view of Kawase as applied to claim 1, and further in view of Yong (previously cited US 6,801,570).

Regarding claim 2, Okamura and Kawase do not explicitly teach a latency control transmitter for communicating the predetermined maximum allowed transmission latency via a message to a constrained rate receiver.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Yong. In particular, Yong teaches a latency control transmitter for communicating the predetermined maximum allowed transmission latency via a message to a constrained rate

receiver (see column 4, lines 45-54, a rate option generator receives a number of input parameters designating, among other things, a maximum allowed delay for communications between transceivers in the system).

In view of the above, having the method of Okamura and Kawase, then given the well-established teaching of Yong, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Okamura and Kawase as taught by Yong, since Yong stated in column 3, lines 25-32 that the total number of bits carried by a DMT symbol to different bearer channels are effectively allocated according to channel conditions.

Regarding claim 5, Okamura and Kawase do not explicitly teach that the constrained rate transmitter further comprises a latency control transmitter for communicating the predetermined maximum allowed transmission latency via a message to the constrained rate receiver.

However, the above-mentioned claimed limitation is well known, as evidenced by Yong. In particular, Yong teaches that the constrained rate transmitter further comprises a latency control transmitter for communicating the predetermined maximum allowed transmission latency via a message to the constrained rate receiver (see column 4, lines 45-54, a rate option generator receives a number of input parameters designating, among other things, a maximum allowed delay for communications between transceivers in the system).

In view of the above, having the apparatus of Okamura and Kawase, then given the well-established teaching of Yong, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the apparatus of Okamura and Kawase as taught by

Yong, since Yong stated in column 3, lines 25-32 that the total number of bits carried by a DMT symbol to different bearer channels are effectively allocated according to channel conditions.

Regarding claim 10, Okamura and Davis do not explicitly teach that the receiver is capable of receiving a message communicating the predetermined maximum allowed transmission latency.

However, the above-mentioned claimed limitation is well known, as evidenced by Yong. In particular, Yong teaches that the receiver is capable of receiving a message communicating the predetermined maximum allowed transmission latency (see column 4, lines 45-54, a rate option generator receives a number of input parameters designating, among other things, a maximum allowed delay for communications between transceivers in the system).

In view of the above, having the apparatus of Okamura and Kawase, then given the well-established teaching of Yong, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the apparatus of Okamura and Kawase as taught by Yong, since Yong stated in column 3, lines 25-32 that the total number of bits carried by a DMT symbol to different bearer channels are effectively allocated according to channel conditions.

9. Claims 3, 6 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura in view of Kwase and Yong as applied to claims 2, 5 and 10, and further in view of Chow (previously cited US 6,009,122).

Regarding claim 3, Okamura, Kwase and Yong do not explicitly disclose configuring, in accordance with the first bit rate, a first bit allocation table for symbols transmitted during the first noise phase and configuring, in accordance with the second bit rate, a second bit allocation table for symbols transmitted during the second noise phase.

However, the above-mentioned claimed limitation is well known, as evidenced by Chow. In particular, Chow teaches configuring, in accordance with a bit rate, a bit allocation table for symbols transmitted during a phase (see column 4, lines 39-54, a superframe bit allocation table is used, wherein a data symbol encoder encodes bits associated with the received data based on the bit allocation table associated with the frame).

In view of the above, having the method of Okamura, Kawase and Yong, then given the well-established teaching of Chow, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Okamura, Kawase and Yong as taught by Chow, since Chow stated in column 4, lines 17-20 that multicarrier modulation systems are able to support multiple bit allocations so that they are able to rapidly alter their bit allocations.

Regarding claim 6, Okamura, Davis and Yong do not explicitly disclose having a first bit allocation table controller for configuring, in accordance with the first bit rate, a first bit allocation table for symbols transmitted during the first noise phase and a second bit allocation table controller for configuring, in accordance with the second bit rate, a second bit allocation table for symbols transmitted during the second noise phase.

However, the above-mentioned claimed limitation is well known, as evidenced by Chow. In particular, Chow teaches configuring, in accordance with a bit rate, a bit allocation table for symbols transmitted during a phase (see column 4, lines 39-54, a superframe bit allocation table is used, wherein a data symbol encoder encodes bits associated with the received data based on the bit allocation table associated with the frame).

In view of the above, having the apparatus of Okamura, Kawase and Yong, then given the well-established teaching of Chow, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the apparatus of Okamura, Kawase and Yong as taught by Chow, since Chow stated in column 4, lines 17-20 that multicarrier modulation systems are able to support multiple bit allocations so that they are able to rapidly alter their bit allocations.

Regarding claim 11, Okamura, Kawase and Yong do not explicitly disclose having a first bit allocation table controller for configuring, in accordance with the first bit rate, a first bit allocation table for symbols transmitted during the first noise phase and a second bit allocation table controller for configuring, in accordance with the second bit rate, a second bit allocation table for symbols transmitted during the second noise phase.

However, the above-mentioned claimed limitation is well known, as evidenced by Chow. In particular, Chow teaches configuring, in accordance with a bit rate, a bit allocation table for symbols transmitted during a phase (see column 4, lines 39-54, a superframe bit allocation table is used, wherein a data symbol encoder encodes bits associated with the received data based on the bit allocation table associated with the frame).

In view of the above, having the method of Okamura, Kawase and Yong, then given the well-established teaching of Chow, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the method of Okamura, Kawase and Yong as taught by Chow, since Chow stated in column 4, lines 17-20 that multicarrier modulation systems are able to support multiple bit allocations so that they are able to rapidly alter their bit allocations.

Regarding claim 12, Okamura discloses that the first noise phase corresponds to a first signal-to-noise ratio (see figure 3, first noise phase is FEXT which has an SNR as shown in graph), and the second noise phase corresponds to a second signal-to-noise ratio (see figure 3, second noise phase is NEXT which has an SNR as shown in graph), the second signal-to-noise ratio being higher than the first signal-to-noise ratio (see figure 3, the SNR corresponding to the FEXT noise phase is higher than the SNR corresponding to the NEXT noise phase), further comprising a second bit rate controller for determining the second bit rate based on the second signal-to-noise ratio (see column 2, lines 32-39, the data transmission is executed according to a bit distribution which has been determined based on the measurement of the SNR).

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okamura in view of Kawase, Yong and Chow as applied to claim 12 above, and further in view of Amrany et al. (previously cited US 6,580,752).

Regarding claim 13, Okamura, Kawase, Yong and Chow do not explicitly disclose a first bit rate controller for determining the first bit rate based on the second bit rate and the pre-determined maximum allowed transmission latency. Yong does teach determining a bit rate based on a maximum allowed transmission latency, as shown above.

However, the above-mentioned claimed limitation is well known in the art, as evidenced by Amrany. In particular, Amrany teaches a first bit rate controller for determining the first bit rate based on the second bit rate (see column 7, line 39 to column 8, line 6, the bit profile of the FEXT (1st) phase is chosen based on information derived from SNR measured during the NEXT (2nd) phase).

In view of the above, having the receiver of Okamura, Kawase, Yong and Chow, then given the well-established teaching of Amrany, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the receiver of Okamura, Kawase, Yong and Chow as taught by Amrany, since Amrany stated in column 2, lines 62-67, the bitrate can be maximized by limiting crosstalk, regardless of network topology.

Allowable Subject Matter

11. Claims 14-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis A. Alia whose telephone number is (571) 270-3116. The examiner can normally be reached on Monday through Friday, 9am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung S. Moe can be reached on (571) 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2616

/Curtis A Alia/
Examiner, Art Unit 2616
8/21/2008

CAA